



## **Q4 2022 Earnings Call February 22, 2023 Transcript**

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### **Presenters**

Patrick Jobin, Senior Vice President, Finance & Investor Relations  
Mary Powell, Chief Executive Officer  
Danny Abajian, Chief Financial Officer  
Edward Fenster, Co-Founder & Executive Co-Chair

### **Q&A Participants**

Julien Dumoulin-Smith – Bank of America  
James West – Evercore ISI  
Brian Lee – Goldman Sachs  
Phil Shen – ROTH  
Kashy Harrison – Piper Sandler  
Joseph Osha – Guggenheim Partners  
Maheep Mandloi – Credit Suisse  
Biju Perincheril – Susquehanna  
Steve Fleishman – Wolfe Research  
Christine Cho – Barclays  
Corinne Blanchard – Deutsche Bank  
Abhi Sinha – Northland Financial  
Colin Rusch – Oppenheimer

### **PATRICK JOBIN**

Thank you Maria. Before we begin, please note that certain remarks we will make on this call constitute forward-looking statements. Although we believe these statements reflect our best judgment based on factors currently known to us, actual results may differ materially and adversely. Please refer to the Company's filings with the SEC for a more inclusive discussion of risks and other factors that may cause our actual results to differ from projections made in any forward-looking statements. Please also note these statements are being made as of today, and we disclaim any obligation to update or revise them.

On the call today are Mary Powell, Sunrun's CEO, Ed Fenster, Sunrun's co-founder and co-executive chair, and Danny Abajian, Sunrun's CFO.

And now let me turn the call over to Mary.

### **MARY POWELL**

Thank you, Patrick. I have really been looking forward to this call to share our strong fourth quarter and full year results with you, as well as to talk about our outlook and priorities for 2023.



We ended 2022 delivering and even modestly exceeding our guidance – growing new installations by over 25% and delivering greatly increased Net Subscriber Values. We exited 2022 with nearly 800,000 customers, 5.7 gigawatts of networked solar energy capacity and \$5.6 billion in Net Earning Assets.

I am confident 2023 will build on this strong momentum as the strength of our subscription model provides market share gains. The year is off to a great start. We are seeing early-funnel sales growth in January of over 30% across our entire direct business and even faster growth in California. Part of this is expected acceleration ahead of the changes in California, but it is also indicative of the broader utility rate trends which continue to rise, and the growing consumer awareness of our offering. Our strong traction is also a result of our ability to attract the best sales talent in the industry that is eager to work with the nation's leading clean energy provider, especially one that is leading on storage and innovation.

Sunrun is the clear leader providing energy as a subscription service, with over 60% share of new subscriptions across the industry. Recent trends in financing costs for loans, the growing need for advanced systems with storage, awareness of the value of service and performance guarantees, along with the uncertain economic climate, have all contributed to the growing relative advantages of our subscription offering. We are already seeing a shift in our sales activities towards the subscription offering and expect it will flow through in a meaningful way in our installation activities in the coming quarters. The customer value proposition is swinging even further towards the subscription model, as the ITC and other potential adders are only available to homeowners in this model, making solar and storage even more accessible to more customers.

Sunrun is significantly advantaged as the leader in storage deployments. We have installed more than 53,000 residential solar and storage systems across the country, more than any other company. We have developed considerable skills and capabilities communicating the value proposition of storage systems with customers in addition to gaining experience in efficiently designing, permitting and installing these more advanced projects. We believe we are also leading in procuring storage hardware given our strong relationships with multiple suppliers and our large scale. While storage supply was a constraint to growth as recently as last year, supply conditions have improved considerably for us, and we are well positioned to dramatically increase the attachment rate of storage. Storage solutions are not only a significant competitive advantage for Sunrun and differentiator in the eyes of customers and salespeople in the industry, they are meaningfully accretive to our margins.

At Sunrun we are continuing to further differentiate our offering to customers and increase our competitive advantages. Just this month we announced a collaboration with PG&E to form a 30 megawatt virtual power plant this summer, helping to provide critical base load in a repeatable way, when it is needed most. This builds on the 17 megawatt virtual power plant we announced in Puerto Rico just a few months ago. With 14 advanced virtual power plant opportunities now forged across the country, we are leading the industry and showing utilities and regulators the possibilities of leveraging our network of distributed home solar and storage systems while generating recurring revenue streams and driving increased customer value.

In the fourth quarter we demonstrated continued progress on making Sunrun faster, better, and stronger in all dimensions of the fundamentals. You can see the results of this through our record-setting Net Subscriber Value of over \$16,000, which, as Danny will discuss, helped us offset so many of the interest rate pressures we faced last year. We achieved this through hard work focused on the fundamentals of cost efficiency and performance improvements along with continued price optimization, while ensuring a strong customer value proposition, even as we invest in innovation and differentiation.

Throughout the year we worked on streamlining our operations, leading to improved customer experience throughout the process and better productivity. We grew new installations over 25% in 2022 while only growing headcount at one-third of that rate. This was achieved through a strong focus on streamlining operations, while delivering customers a great experience and value. The average hours spent on an installation by our crews improved 23% in Q4 compared to the prior year, driven in part by a reduction of the average crew size by 12% as we found ways to be more productive and efficient while maintaining our high safety and quality standards. We also maintained strong overhead cost discipline, with G&A



expenses declining more than 12% compared to last year, and reaching \$1,100 per new customer by Q4, a 29% improvement year over year, showing the benefits of our scale and disciplined approach to sustainable, profitable growth.

I am tremendously proud of what our team is doing in the field each and every day for our customers, and I know we will continue to drive even more efficiency while delighting our customers in 2023.

Shifting gears to policy updates. The biggest development since our last call is the finalization of the “NEM 3.0” proceeding in California, where regulators approved an updated Net Billing Tariff. The final language was dramatically improved from the initial draft, as the regulators dropped the proposed discriminatory fixed-fees on solar customers. The new proposal will introduce variable pricing with significant reductions of the value of energy exported back to the grid during the day, dramatically increasing the value proposition of storage. As I noted earlier, Sunrun is the leader in storage solutions and is well positioned for this transition to more solar plus storage installations.

In addition to our solar offering – and solar with storage offerings for home backup – we will launch a new offering in California that incorporates storage to optimize the economics of energy produced by the solar system, reducing low-value exports and increasing self-consumption for our customers’ benefit. This system will be easier and quicker to install. We believe this new offering delivers a strong value proposition for our customers and Net Subscriber Value for Sunrun.

In the interim, prior to the new structure becoming effective in mid-April, we are already working hard to help customers sign up under the current rate structure in California to lock in even greater savings potential. We are seeing record-breaking demand in California, with early-funnel sales activities in January growing more than 30% compared to last year. Lower sales activity is expected immediately following implementation of the new tariffs, but we also expect that the combination of the pull-forward of demand into Q1 and the anticipated strong customer response to our innovative offering, will result in strong growth over the long term in this market. Combined with the strong sales-driven backlog in California, and strong demand across the country, we expect to deliver smooth and sequentially growing installations throughout 2023.

On other policy matters, we are excited by the increased opportunities created by the Inflation Reduction Act. Investing to help disadvantaged low-income communities, providing economic benefits to areas with high unemployment or that have high exposure to fossil fuel-based economies and helping encourage domestic production of advanced clean technologies are all things that Sunrun is well positioned to do. As we have discussed before, the Inflation Reduction Act established three investment tax credit adders to accomplish these objectives.

We, along with so many across the industry, were disappointed to see that so many low and moderate income Americans, and those in multi-family dwellings, will now have to wait to benefit from the LMI adders. The initial Treasury guidance released last week appears in opposition to the administration’s broad goal to encourage as much solar in low income communities as fast as possible. As many in the industry have already noted, the proposed drawn-out and long mechanism to allocate the available capacity likely delays many projects, delaying and potentially risking delivering benefits to low income communities. These are the communities that need the benefits of solar energy the most, and Sunrun is particularly well-positioned to help these communities gain access to affordable, clean and predictably-priced energy at a critical time when utility rates are escalating so quickly and household budgets are being squeezed. We will continue to work with others in the industry, and with policy makers, to make sure these communities benefit in the way the IRA legislation intended.

While we are awaiting guidance from the Treasury on the other two ITC adders – for energy communities and domestic content – we are proactively taking steps today to ensure we can act quickly once clarity is obtained. For example, we have already entered into agreements for nearly 200 megawatts of module supply from a leading domestic producer in addition to meaningful supply arrangements for storage solutions produced in the US which should, in our opinion, allow a significant portion of our volume to



quality for the domestic content adder, but obviously we will have to wait until official guidance from Treasury is obtained.

### **Concluding Comments**

In summary, Sunrun continued our focus of crushing it on the fundamentals and we have the right strategy and high-energy, focused, and experienced team in place to continue to successfully navigate these uncertain times. The value proposition for customers continues to increase as utility rates escalate rapidly, and consumers demand affordable, clean and predictably-priced energy. While 2022 brought its set of challenges and we will certainly have our share of things to overcome in 2023, I am proud of our team's quick actions last year to adapt to the rapidly changing macro environment around us. At Sunrun, we see adversity as a way to help shape ourselves and make us a stronger company for the long-run. We have more work to do, so we won't be sitting idle, and I am confident that our team is up to the challenge.

Before I hit one final item, I want to express my sincere appreciation for all the Sunrun employees working so hard to create a company that is faster, better and stronger for our customers and our communities. Building the best company and helping turbocharge this consumer-led revolution in energy is only possible with the talented and committed team who is ready to lead the charge every single day.

### **Leadership Structure Changes**

Last, but certainly not least, I also want to update you on a management change we announced today. After over 15 years in a full-time leadership capacity, Ed Fenster, who has been on parental leave since August, decided the timing was right to transition to a role where he can spend more time with his young family.

While Ed will cease having direct reports at the company he will remain very active in strategic matters.

Ed won't be quite as visible day to day, but his trusted counsel will be omnipresent, and we certainly know that he won't hesitate digging deep on topics with our team as needed.

To state the obvious, Ed has played an invaluable role in making Sunrun the market leader, and he will continue to play an invaluable role going forward. You'll continue to hear from him and he'll continue providing his wisdom, insight and leadership throughout the company in so many ways.

Thank you so much Ed! And with that, over to you.

### **EDWARD FENSTER**

Thank you, Mary.

I am so thankful for, and impressed by, the team leading Sunrun today. It's been a great honor to have had the privilege of working day in and day out alongside the many talented people who have helped Sunrun grow and flourish from a small company run out of my attic into the nation's leading provider of solar and storage.

While being on parental leave over the last several months, I concluded that I want to spend more time with my children during these important formative years before they are in school. I also plan to travel with them for a few months over this summer.

The Company and the leadership team are both in a fantastic position. I frankly don't believe my full-time day-to-day participation is any longer key to our success, and I remain as committed as ever to that success. I will continue to be involved in key decisions, participate in management and strategy meetings, and meet very extensively with our capital providers. I am not taking on other work; I just believe the time



is right for me to focus my Sunrun time in the highest value areas and to recover the balance to spend time with my family.

Company leadership is in fantastic hands. Sunrun has deep bench strength and tremendous experience across all aspects of the business. Over the last few quarters, the Company has become more operationally efficient and enjoyed significant gains in net promoter score while increasing volumes and pricing. The operating results corroborated my intuition that it is appropriate to make this transition now.

I am grateful for all your support, and I look forward to remaining part of this great company as we move forward. Speaking of which, I'd like to turn the call over to Danny to share the financial update.

#### **DANNY ABAJIAN**

Thank you so much, Ed. Working with you so closely and receiving your mentorship has been a real privilege – I appreciate that your counsel to our team is always a call away.

Today I will cover our operating and financial performance in the quarter along with an update on our capital markets activities and outlook.

Turning first to the results for the quarter.

#### **Volumes**

In the fourth quarter, Customer Additions were approximately 37,400, including approximately 27,500 Subscriber Additions. Our Subscriber Additions were 72% of our total Customer Additions in the period, a small increase from last quarter. Our recent sales activities, and the benefits from the tax credit adders in the Inflation Reduction Act, which are only available to the solar subscription model, indicate the mix of Customer Additions is likely to shift toward Subscribers more significantly in the quarters ahead. Solar Energy Capacity Installed was approximately 275 megawatts in the fourth quarter of 2022, a greater than 25% increase from the same quarter last year.

For the full year 2022, Solar Energy Capacity Installed was nearly 1 Gigawatt, at 991 Megawatts, a 25.2% increase from the prior year, modestly exceeding our guidance. Our installation teams and partners performed incredibly well in the fourth quarter, driving strong efficiency and productivity metrics while also remaining committed to safety and high quality installations.

The increased pace of installations is allowing us to gradually work down our pipeline, which is approximately one quarter at the end of Q4. We aim to manage sales and installation activities to maintain a pipeline that optimizes our resource planning and customer experience, although we do expect our pipeline to increase in the first half of the year.

We have now installed over 53,000 solar and storage systems. We expect storage installations will grow rapidly in the quarters ahead and attachment rates will increase meaningfully. Storage solutions not only provide customers increased value from energy rate optimization and backup power capabilities, but they carry higher margins, typically by several thousand dollars per customer. As Mary highlighted, our ability to satisfy demand for storage installations with superior operational fulfillment is a clear differentiator for Sunrun in the marketplace.

We ended Q4 with approximately 797,000 Customers and 667,000 Subscribers, representing 5.7 Gigawatts of Networked Solar Energy Capacity, an increase of 21% compared to the prior year. Our Subscribers generate significant, recurring revenue with most under 20- or 25-year contracts for the clean energy we provide. At the end of Q4, our Annual Recurring Revenue, or ARR, stood at over \$1 billion with an average contract life remaining of over 17 years.

#### **Subscriber Value, Creation Cost, Net Subscriber Value & Total Value Generated**





During 2022, we successfully demonstrated our adaptability and financial resiliency in the face of persistently high inflation, a historic speed of interest rate increases, a dynamic supply chain and a large installation backlog. We implemented significant pricing increases throughout the year behind double digit utility price inflation, as utilities passed their own increases in labor, fuel, and capital costs through to their customers. Because the trajectory of utility price increases were similar to our price increases for new customers, we maintained an attractive value proposition and sustained high demand. We found and created ways to offset rising input costs with improved operational efficiency.

In Q4, Subscriber Value was approximately \$46,300 and Creation Cost was approximately \$29,800, delivering a Net Subscriber Value of \$16,569, a healthy increase from \$13,259 in the prior quarter.

Total Value Generated, which is the Net Subscriber Value multiplied by the number of Subscriber Additions in the period, was \$456 million in the fourth quarter.

From Q4 2021 to Q4 2022, our Subscriber Value increased by over \$9,000, or approximately 25%, while our Creation Cost remained approximately flat despite sharply higher equipment prices and general inflation. Our Net Subscriber Value more than doubled from approximately \$7,000 year-over-year. As a reminder, starting in Q3, our Subscriber Value reflected the benefit of a 30% tax credit as opposed to 26%, provided by the passage of the Inflation Reduction Act in August.

Each quarter, we provide ranges for advance rate, measured as a percentage of contracted Subscriber Value, that reflect current capital costs. We finance our systems upon installation with tax equity and project-level non-recourse debt, which monetizes a portion of our Subscriber Value. Our advance rate ranges allow investors to approximate proceeds from all sources, net of fees, and gauge the obtainable net cash unit margins on deployments. From Q4 2021 to Q4 2022, our advance rates fell substantially from a range of 95 to 100 percent to 75 to 85 percent. However, because we also increased our contracted Subscriber Value by over \$8,200 over the same period, our estimated proceeds per customer increased by \$700, using the midpoints of these two ranges.

Given today's higher cost of capital environment, commencing with 2023 reporting, we anticipate increasing our discount rate assumption from 5%, which we used in our reporting throughout 2022, to 6%. As you can see on slide 12, adjusting the discount rate higher by 1% would lower the total Subscriber Value, and thus Net Subscriber Value, by approximately \$3,600 in Q4. Because proceeds per customer are already based on market rates, our advance rate in Q4 as a percentage of contracted Subscriber Value would increase to approximately 80 to 90 percent.

### **Gross and Net Earning Assets, Cash Balance**

Turning now to Gross and Net Earning Assets and our balance sheet.

Gross Earning Assets were \$12.4 billion at the end of the fourth quarter. Gross Earning Assets is the measure of cash flows we expect to receive from customers over time, net of operating and maintenance costs, distributions to tax equity partners in partnership flip structures, and distributions to project equity financing partners, discounted at a 5% unlevered capital cost.

Net Earnings Assets were nearly \$5.6 billion at the end of the fourth quarter, an increase of \$487 million or 10% from the prior quarter. Net Earning Assets is Gross Earning Assets, plus cash, less all debt.

We also anticipate adjusting the discount rate used to calculate Gross Earning Assets from 5% to 6% to be consistent with the changes in how Subscriber Value is calculated. On slide 11 we provide Gross Earning Assets and Net Earning Assets pro-forma using a 6% discount rate.

We ended the quarter with \$953 million in total cash.

### **Capital Runway**

We continue to maintain a robust project finance runway. As of today, closed transactions and executed term sheets provide us with expected tax equity capacity to fund over 400 megawatts of projects for Subscribers beyond what was deployed through the fourth quarter. Sunrun also had \$837 million in



unused commitments available in its \$1.8 billion non-recourse senior revolving warehouse loan at the end of the quarter to fund over 320 megawatts of projects for Subscribers. This strong capital runway allows us to be selective in timing our capital markets activity.

### **Outlook**

Turning now to our outlook.

We expect growth in Solar Energy Capacity Installed to be between 10 and 15 percent for the full year 2023, which we believe will result in market share gains. We currently see more upside opportunity than downside risk in achieving growth in this range, but feel it is best to err on the cautionary side early on in the year. Even with the tremendous sales activities we are currently seeing, our conservative stance is influenced by the mid-April transition to the new Net Billing Tariff in California, extended cycle times with higher storage mix, timing uncertainty with the implementation of ITC adders, and our ongoing pricing adjustments and go-to-market optimization efforts.

We expect our storage attachment rate will increase significantly in 2023 from approximately 15% in 2022.

The strong sales growth we are seeing, coupled with the increasing mix of storage, is likely to extend cycle times and increase working capital needs, but we will remain focused on prudently managing our backlog and working capital, without forgoing the tremendous opportunity to extend Sunrun's lead in 2023.

In Q1, we expect Solar Energy Capacity Installed to be in a range of 215 and 225 megawatts. The first quarter is typically seasonally lower than the fourth quarter, as you can see from nearly all of our historic results over the years, due to lower selling activities exiting the prior year and more weather-related installation limitations and shorter days entering the new year.

We expect Net Subscriber Value to be approximately \$10,000 in Q1 using a 6% discount rate, and to increase sequentially throughout 2023. For comparability, using a 5% discount rate, Net Subscriber Value would be over \$13,000 in Q1.

Our focus is on delivering profitable growth, efficient operations and strong unit margins, while navigating a fluctuating interest rate environment. Our discipline has served us well for the last 15 years, and we believe will serve the company, and our stakeholders, well in the current economic paradigm.

### **Capital Markets**

Turning briefly to our capital markets activities and outlook.

As we've shared before, we regularly enter into interest rate swaps to hedge capital costs on our newly installed customers. We are principally exposed to interest rate fluctuations between customer origination through shortly after installation. Around the time of installation, our systems are financed with project-level non-recourse debt. Nearly all of this financing is insulated from near-term interest rate fluctuations, as our debt is either fixed-coupon, long-dated debt securities or floating-rate debt that has been hedged with interest rate swaps.

At the end of 2022, Sunrun executed an \$835 million term out financing, consisting of a \$600 million non-recourse syndicated bank facility and a \$235 million subordinated debt facility, supporting a 335 megawatt portfolio of systems. The team executed this transaction particularly well, delivering senior loan pricing at an initial credit spread 100 basis points below recent solar loan securitization transactions observed in the sector at that time, and a cumulative advance rate exceeding the high end of our guidance range of 85%. Because the advance rate on this portfolio benefited from previously placed in-the-money interest rate hedges, we expect the advance rate in our next term-out transaction, which does not carry such benefit, to be slightly lower.

Cost of capital has trended favorably over the last few months as credit markets have improved. We continue to observe our capital costs in the mid-six to mid-seven percent area. Consistent with this cost of



capital range, we expect advance rates on our newly deployed portfolios to still be between 75 and 85 percent of contracted Subscriber Value calculated using a 5% discount rate, or 80 and 90 percent against contracted Subscriber Value calculated using the new 6% discount rate.

The longstanding relationships we have cultivated with many capital providers in multiple markets, our reputation as a high-quality sponsor, and the consistently strong payment performance trends of our customers through multiple economic cycles, affords us ready access to capital and allows us to be selective with our transactions. Our next term-out transaction will likely be in the securitization market, as opposed to the bank market, due to much-improved conditions in that market to start the new year.

With that, let me turn it back to Mary.

#### **MARY POWELL**

Thanks, Danny.

I am so appreciative of our hard-working team whose adaptability and commitment to our purpose helped deliver an amazing year of transformation for Sunrun in 2022. I am confident that our momentum will continue into 2023 as we focus on the fundamentals to make us faster, better and stronger for the benefit of our beloved customers, our amazing employees, the hundreds of communities we operate in across the country and our financial partners.

With that, Operator, let's open the line for questions.

#### **Operator**

At this time, we will be conducting a question and answer session. If you would like to ask a question, please press star, one, on your telephone keypad. A confirmation tone will indicate that your line is in the question queue. You may press star, two, if you would like to remove your question from the queue. We ask that you limit your questions to one and a follow up so that others may have an opportunity to ask questions. For participants using speaker equipment, it may be necessary to pick up your handset before pressing the star keys. One moment please while we pull for questions.

Our first question comes from Julien Dumoulin Smith with Bank of America. Please proceed with your question.

#### **Julien Dumoulin Smith**

Hey. Good afternoon, and congratulations at that. Thank you, guys, for the time. Nicely done, I would say. And more specifically here, the look for 10% to 15% on on '23 is impressive. You guys said in your prepared remarks that you're looking for market share gains. Can you guys elaborate a little bit on the depth of that market share again, considering some of the commentary on the loan side? Just what are you seeing in terms of your ability to kind of capture some of that shift, if you will?

#### **Mary Powell**

Yeah. Hey. Great. Julien, it's nice to hear from you. This is Mary. Yeah. So really, it's based on the fact that again, we're seeing really good signs at the beginning of the year in terms of consumer demand. We believe that we are really well positioned with a subscription model for this year, which clearly has a more valuable customer proposition because of basically its ability to monetize the value of the ITC adders for customers. And then again, we expect to gain market share because again, you have folks like Wood McKenzie expecting sort of flattish to 6% and we're looking at--we're feeling like 10 %to 15%. As you know, we're very, very focused on sustainable profitable growth. So again, we're looking at that 10% to 15% as being reasonable and conservative. So given that and given Wood McKenzie, we believe will probably pick up some market share.

And also, it's really what we call the year of storage, and Sunrun is the leader in storage, and we feel like we are really well positioned in California, which will be--always is and will continue to be a really important market for our products, because frankly, Californians need our product because the utility power is just not as reliable and is very highly priced. So we feel like we're in a good position.



**Edward Fenster**

Right. Julian, it's Ed. The one thing I would just add, as a reminder on the--because we do expect a big increase in storage installations this calendar year. A storage installation can take 50% more labor hours than a solar and only one and can take as many as 50 or more days to get installation. And so as you significantly increase the storage attachment rate, you have many more projects in the development pipeline. And when we're talking about the annual growth rate, we're actually obviously talking about the projects that are exiting the pipeline, not entering the pipeline, and so that's a factor in there as well.

**Julien Dumoulin Smith**

Yeah. That actually preamps the follow up here. I mean, the funnel, you guys talk about 30% plus. You're only at 10% to 15%. I mean, what does that say for '24? I know we might be a little early. And then related to that, 16k plus per customer here, it's pretty solid print. How do you see the cadence of that through the first the year, as you say, too?

**Mary Powell**

Yeah. So we're actually, Julien, to build on Ed's response, again, one of the things to think about, right, when we talk about growth is how we've classically talked about it is installed capacity. But again, as we're becoming more and more of a clean energy storage company as well, that really is very accretive to value. So really looking at growth in the context of additional value we can create through storage is really, really important as we look to the year. And Danny, you--

**Danny Abajian**

Yeah. And on the net subscriber value, just allow me to do the walk. As I said in the prepared remarks, we did achieve greater than 16,000 in Q4. And we guided to greater than--or approximately \$10,000 in Q1, in there is the switch from 5% to 6% discount rate. And if we went on a like-for-like basis at the 5% discount rate, the guide would have been over \$13,000 per customer in Q1. And between Q4 and Q1, obviously there's a sequential decline in installation volume due to some seasonality. That's normal in the business. And as we kind of see that volume drop over that period of time, there's reduced operating costs leverage coming through in the period, but then the outlook would be to grow that number sequentially throughout the year, as we grow volumes and shift the mix towards higher value projects.

**Operator**

Our next question comes from James West with Evercore ISI. Please proceed with your question.

**James West**

Thanks, and good afternoon, everybody. Hey, Mary. Just want to follow up quickly on kind of where Julien was going with his questions around your expected installation growth versus the increase you're seeing early this year. I guess, as you transition to more of, as you mentioned, a storage company rather than just pure residential solar, the correlation between kind of the top line and what you guys see as installation growth. I would assume that that starts to break down somewhat and maybe revenue outgrows installations. Is that a fair comment?

**Edward Fenster**

Yeah. I mean, there's a greater disconnect between the top line growth and the installation volume growth, again, as we shift from more complex to install jobs that take a few more hours, and as we see the ramp up in our installation capability against that volume growth. So there's just generally a lagging effect, and an expectation that the size of our pipeline will resume growth after a few quarters of contracting.

**James West**

Okay. Okay. Makes sense. And then maybe just a quick follow up for me. I noticed, obviously you had some commentary in your prepared remarks about your VPP business, and I saw some commentary in the press release around lunar and in moving to the grid share software on your current VPPs. I was wondering how that process is going. Are you finding it to be a higher quality product? Will you switch to that on all your VPPs going forward and maybe other parts of your business?

**Mary Powell**

Yeah. Thank you for noting that. We are so excited about our work in the virtual power plant space. And as we noted in my remarks, again, the PG&E announcement following the Puerto Rico announcement, we just see this as an area that strategically is so important as we look to the future, particularly as we look to a future with so much more storage paired with solar. So I think as I've often talked about, when I talk about radical collaboration, that we're going to get to the day, I think in the not too distant future, where we literally have regulators and utilities sort of banging down the doors wanting to have more access to our capacity.

So a long winded way transition into your question on lunar, we are really excited about their capability. So that is going incredibly well. Not only are they working on this next generation storage capability that we'll have access to in '23, but through their work with this grid share program, we just--yeah. We find it really highly sophisticated, great performance, and we're really excited to be working with them.

**Operator**

Our next question comes from Brian Lee with Goldman Sachs. Please proceed with your question.

**Brian Lee**

Hey, everyone, good afternoon. Thanks for taking the questions.

**Mary Powell**

Hey, Brian.

**Brian Lee**

Hey, how's it going? Maybe going back to the market share gains, that's super interesting and encouraging. I guess, how much of that is coming from specific states that you would highlight as areas where you've doubled down efforts, invested more than your peers. And then how much of that is just coming from this broader loan to lease makeshift that everyone's obviously acknowledging at this point? And then maybe related to that, just what are you embedding for California, non-California growth in general for your outlook here for the year? And then I had a follow up?

**Mary Powell**

Yeah. I would say, at a high level, Brian, as we've talked about, when we've met--our focus, again, has been faster, better, stronger. So we've--one of the area's I'm so impressed with the team in 2022, and that we're going to continue in 2023 is always look--like looking at data every week, every market, every GO, making decisions around our position and how to leverage the best customer value proposition in that area. So we're going to continue to do that.

I mean, from a broader perspective, though, we're definitely seeing in all the market--like all the markets that we're in, we're seeing great interest for what we have to offer to consumers. We also are feeling really good about our position in California, because of our innovating around a product that we really feel will really help customers monetize the value of the new tariff in California.

So with that, I would toss it to Danny. Do you want to give more specific growth level comments?

**Danny Abajian**

Yeah. I think Mary covered it well, in the lead in as well, where she said that 30% early funnel sales growth nationally and higher than that in California, and that's at the moment. And I think the expectation, now we have to see it play out, but the expectation is post-April, mid-April market transition in California, we think the value prop will still be great for customers in the market, and the growth rates there will tread more towards what we've seen X California.

**Brian Lee**

Okay. Fair enough. I appreciate that additional color. And maybe another one for you, Danny, or maybe Ed as well. Just high level thoughts on this transition from PV5 to PV6, I think some investors were maybe expecting you to go all the way to even PV7. So just thoughts on PV6 versus PV7, and then general cost of capital trends in '23, and what you expect in ABS financing costs and volume this year. Thank you.

**Danny Abajian**

Yeah. Thanks for the question. Yeah. So I think we--as we've said, we want to have a discount rate in the metric that doesn't--that we think is good for the reasonably long-term and doesn't fluctuate every quarter. And as you saw in the remarks as well, quarter-over-quarter fluctuations also generate the need to explain lots of pro forma. So it's like, just for period-over-period comparability, the thought was to select something that allows us to keep it in place for a year. And we were thoughtful about that looking at where rates have kind of moved around in the recent past, looking at long term rate expectations, and felt six was a good mark to approximate the system value. But we're also continuing to give the constant guidance on where advance rates are fluctuating at any moment in time relative to market interest rates. And we'll continue to give that clarity on how much of the contractive subscriber value we are able to monetize into cash proceeds at the point of install.

So that number today, looking at markets, we mentioned the 75% to 85%, which will be 80% to nine 90% using the new discount rate, and that's for equivalent proceeds. We still maintain that range. Excuse me. We still maintain that range going into Q1 given where rates are today, probably with an expectation that we'd be around the midpoint or the top half of that range, somewhere between seven and seven and a half, given where we've observed markets in the last couple of weeks. So from an advanced rate standpoint, that would put us in the bottom half of the advanced rate guidance range, just based on where things are trending at the moment.

**Operator**

Our next question comes from Phil Shen with ROTH. Please proceed with your question.

**Phil Shen**

Hey, guys. Thanks for taking the questions. I know a lot has been asked around the '23 guide and the outlook. I wanted to hit it from a different angle. Mary, I think you talked about the guidance being reasonable and conservative and was wondering if another area of conservatism might be around the onboarding of new dealers. So I'm imagining there's a fair amount of dealers wanting to jump on your platform at this point. To what degree could that serve as yet another level of upside? As my sense would be that maybe that 10% to 15% growth is maybe more organic with your existing base with dealers. What's been the interest and activity of new inquiries as well? Thanks.

**Danny Abajian**

Yeah. I would say, relatively more organic, definitely seeing the flywheel effects, as we've put the Sunrun and Vivint businesses together now, with a two year operating period and track record, definitely being seen also as an attractive place to sell directly. So I'd say it's more direct driven than dealer driven. And to the extent it becomes dealer driven, we would view that as relatively more upside to the model.

**Mary Powell**

Yep.

**Phil Shen**

Great. And can you guys comment on whether or not you are seeing a high level flow and activity from those dealers externally?

**Danny Abajian**

Is the question like with us on our platform?

**Phil Shen**

Yeah. Are you seeing a greater in--are you getting inbounds from dealers that you historically have not worked with because you have your (inaudible) in subscriber (inaudible)?

**Mary Powell**

If you would guess -- I mean, we're -- I think the way to answer it is, yes. Again, we're the nation's leader. We also, again, back to how I described our whole go to market strategy and how we worked it in 2022 is we're very selective, and we're very disciplined. So again, our focus is on sustainable, profitable growth. And so yes, you know that there are definitely different ways we could see a path to creating more upside.



But again, we're really super focused on being selective and disciplined to ensure that we get to sustainable, profitable growth.

**Phil Shen**

Great. Thanks, Mary. In terms of my follow up, it's on NEM 3.0 in California. Mary talked about this new offering in California. It sounds like it has a strong value proposition and contributes Walden net subscriber value. Most are expecting a decline in California once NEM 2.0 installations are done, but can you talk about this new offering and possibly how it could serve your customers and potentially result in a situation where could you guys actually grow your California volumes year-over-year in a time when many of your competitors are actually losing or decreasing year-over-year? Thanks.

**Mary Powell**

Yeah. I mean, I think the most powerful thing for Sunrun as we go into this year in California, is that we have deep bench strength around storage. So again, we're the nation's leader in providing storage in customers' homes. We have 53,000 customers that already have storage. So yes, this product--again, we've come up with something that is quicker and easier to install and really provides great savings proposition for customers. And so we think it'll be very powerful. But yeah, I think definitely our history and our leadership on storage is going to be very, very helpful and is a part of differentiating us for sure from some of the others.

I mean, one of the reasons we really were agitating with regulators and policymakers last year for a longer ramp time was, we saw that for the rest of the industries, particularly the longtail that may not have the experience and storage, that it's going to be much harder to quickly adopt to this new tariff which really relies on capabilities around storage. So we're feeling like we're in good shape as we go into the end of the year.

**Edward Fenster**

And to just underscore or maybe highlight something that I believe Mary mentioned on the call, we are expecting on an installation basis, sequential growth and installations across all the quarters of this year.

**Mary Powell**

Yes, 100%.

**Operator**

Our next question comes from Kashy Harrison Piper Sandler. Please proceed with your question.

**Kashy Harrison**

Hi. Good afternoon, and thanks for taking the questions and then congrats, Ed. So just first one for me, just one quick follow up question on the 2023 guide. How are you thinking about your lease loan mix in 2023?

**Danny Abajian**

Yeah. We said on the call, 71%, went to 72%. And the outlook there is closer to the 80% area. And if you look historically, prior to last year, we were generally in an 80% to 85% range. I think we'll trend more towards the kind of the historical norm we saw in the business.

**Kashy Harrison**

Got it. Thanks. That's helpful. And then my follow up question, based on the slide that you have with the advanced rates, you indicated that you can generate roughly I think \$3,600 per customer. How are you thinking about the changes in working capital during 2022? Looks like it's been about \$400 to \$500 million these past few years, and so I'm just curious how you were thinking about 2023?

**Danny Abajian**

Yeah. The working capital is, I would say, mainly associated with the run up in sales, right, which results in a lot of the cost structure of our sales organization being incurred ahead of the realization of proceeds. And then as we ramp the operational capacity, some fixed investment there to grow the footprint, as well as in particular this year, with a meaningful growth in the battery attach rate, and just general growth, continued

growth in supply chain spend and inventory balance. And you'll see a pretty substantial move in the inventory balance on the balance sheet, kind of in line with that already occurring in the period in Q4.

**Kashy Harrison**

Sorry, just to clarify, are you saying that your changes in working capital in '23 will be lower than '22? Is that what you were getting at?

**Danny Abajian**

Yeah. I don't have the exact comparison, but I would say the amount of installation growth last year being 25%, this year being 10% to 15%, would suggest lower. But the amount of--offsetting that would be the amount of equipment cost per installation with the higher tax rate would also be higher. Right? So the value of equipment per job is going up but the number of installs were ramping up into relatively year-over-year. It's a lower growth rate, obviously. So there are probably offsetting factors there.

**Mary Powell**

Yeah. I would say--the other thing I would add to that is just again, in the vein of faster, better, stronger, our team is actually very confident that we still also have, again, more operational improvements and efficiencies to harvest that will help us, particularly as we look at like moving the backlog through, that will help us definitely, sequentially, you're going to continue to see improvements in that regard.

**Operator**

Our next question comes from Joseph Osha with Guggenheim Partners. Please proceed with your question.

**Joseph Osha**

Hi, and thank you. Ed, we are going to miss you, man.

**Edward Fenster**

I'm going to be on the call. I'll be here for you, Joe.

**Joseph Osha**

Okay. Good, good. I feel better.

**Mary Powell**

You may not get to miss him.

**Joseph Osha**

Oh, I feel better now. In terms of this transition in California, obviously the deadline is April 14, or whatever it is, but I've heard you refer to installer backlog. How much install backlog Do you think you can get? Could we be installing NEM 2.0 systems, say, through September or so? I'm trying to get a sense of that.

**Mary Powell**

I mean, what we're aiming towards is likely months, not quarters of backlog. So again, back to what I was speaking to in the answer to the last question, we still see--this team is very focused on faster, better, stronger, and we still see sequential improvements we're going to continue to make that are going to allow us to digest that backlog, or that pipeline, shall we say. We're building a healthy pipeline, and we're trying to resist having as many customers as possible become backlogged. So we're very focused on moving that through.

**Danny Abajian**

I would say, last year is the track record for that. Right? If you track through the quarters, I think at the peak, we were at about two quarters of backlog, and we brought that down throughout the year. And through tough work on finding the efficiency gains in the business, and as we transition more towards battery installations, that we're kind of bullish on our ability to find those efficiency gains there as well.

**Joseph Osha**

Okay. Got it. Thank you. And then my other question, given the talk about working capital, if I look at 2022, you guys did manage to put around \$100 million or so cash on the balance sheet. Should we perhaps not expect to see that level of cash generation this year, given what I'm hearing?

**Danny Abajian**

Yes. I think the unit level, I think we did the unit level cash log, which moved by about \$700 per customer. So a lot of the margin gain was also offsetting the interest rate increases. So we're, I think, starting the year a little bit better off on a cash unit margin perspective. Certainly, we just talked about, I think, the inventory, kind of the preparation for the run up in volume will be consumptive from a working capital perspective. And as we travel through the year, and transition and realize more higher value projects, we do expect a sequential growth in the unit margins, but we will see offsets from working capital through the year.

**Joseph Osha**

Okay. Thank you very much.

**Operator**

Our next question comes from Maheep Mandloi with Credit Suisse. Please proceed with your question.

**Maheep Mandloi**

Hey. Good evening, thanks for taking questions here. Just one question on the NPV per customer net subscriber value. You talked about a sequential decline in Q1 versus Q4 and ramping up through the year, but could we expect it to ramp up back to that \$16,000 on like-to-like basis by Q4? And also just want to understand the variables going into it. Are you assuming 30% ITC or any of the others for your customers? Yeah. Thanks.

**Danny Abajian**

Yeah. Yeah. That's a good observation on the last--good question on the last piece. The \$10,000 guide with the new 6% discount rate does not assume the realization of any ITC adders in Q1. To the extent--obviously, the low income would be the most material piece of that, and we did address kind of the timing concerns around that, but that would generate upside to the number as those get realized. Energy communities is another adder that is not assumed. We're waiting for more specific guidance on what will qualify, but we have reasonably high confidence on the portion of our business we're already doing that when it installs and gets realization of those adders, that we would also see further upside to the metric from that source.

Domestic content, similarly not assumed. As we talked about, we have almost a couple hundred megawatts of supply there. To the extent the guidance comes out and we install those in a way that qualify and then confirm that, that's further upside. And then the rest of the sequential growth will be related to higher pricing realization in general, but also the shift towards higher value projects as we increase the battery mix throughout the year, all of those are contributing factors, but again, the 10,000 doesn't include the upside from the adders and we expect the sequential growth.

Also, as we see the decline in installation volume, and as we report the metric on an installation basis, largely on the creation cost stack, you will see some of the reduced operating leverage on operating costs in Q1. And you'll also see relatively fewer on the top line for subscriber value, relatively fewer subscribers getting realized into that metric. So there's some operating leverage considerations in the Q4 to Q1 one block as well.

**Edward Fenster**

This is Ed. I would just add, also, more sales activity in Q1 than Q4. And because the metric is just looking at the number of installed customers, and then all the cash costs in the period, as we move from Q4 to Q1, as Danny said, we have fewer installations and more sales activity, both of which create a headwind and the metric that does reverse over time.

**Maheep Mandloi**



Got it. Thanks. And then maybe just one question and it's probably been asked different ways around cash and ration. But maybe just question on the focus from a metrics point of view, should we expect the focus on this NPV, also a net subscriber value per customer? Or looking for any new metrics to consult investors? But I appreciate the story here. Thanks.

**Edward Fenster**

Yeah. We'll continue to focus on the primary metrics. Obviously, one of the things--there's creation--there's value creation from subscribers. There's also headline megawatts. One of the dynamics also to keep in mind is the value per megawatt is also appreciating considerably, again, because of higher value installations throughout the year. Ultimately, the GAAP financials are also a place where there's probably opportunity to simplify, although that's something we continue to evaluate on an ongoing basis.

And then ultimately, the objective is to grow unit margins and continue that march forward, as we did throughout last year, that as we get into a stable interest rate environment and we continue to grow our unit margins, like cash flow generation, ultimately is the priority. But we're also kind of being cautious on given the amount of growth we've been seeing, it is also consumptive from a working capital standpoint, as we previously discussed.

**Operator**

Our next question comes from Biju Perincheril with Susquehanna. Please proceed with your question.

**Biju Perincheril**

Hi. Thanks for taking my question. Going back to '23 guidance, can you sort of bridge the insulation growth in the first quarter being sort of in 3% or so to the 10% to 15% growth for the year? Is that all market share gains and from the shift towards more to TPO systems, or is there some other factors there as well?

**Edward Fenster**

Yeah. The Q1--so we typically see a decline in Q1 from Q4 if you look across years. The percentage decline can fluctuate a bit. Again, if you look at past periods, the year-over-year comparisons can look a little bit irregular. Quarter-over-quarter, year-over-year comparisons can become a little bit irregular. So definitely, again, expecting the sequential growth, and that to get realized at a 10% to 15% annualized rate, where we think there's more upside opportunity than downside risk to that range. And the opportunity, again, comes from the extra volume we're seeing, but more specifically, the ability to fulfill all that extra volume we're seeing in the period as we grow our build capacity.

**Biju Perincheril**

Well, and you said (inaudible) normal impact in that first quarter number from weather or anything else?

**Edward Fenster**

Not unusual. A little bit of weather, a little bit of, obviously, delivering the strong--against the--the strong growth against our guidance. We did accelerate a lot of our pipeline, but nothing unusual.

**Mary Powell**

Yeah. No, there's a lot of seasonality that just shows up.

**Operator**

Our next question comes from Steve Fleishman with Wolfe Research. Please proceed with your question.

**Steve Fleishman**

Yeah. Thank you. Good afternoon. Questions on the IRA adders. So the--I guess first thing is if you find later on that you would qualify for a low income adder or energy community for someone that you added in Q1 or Q2, can you go back and capture the adder later on?

**Danny Abajian**

As currently set--on the low income piece, as currently set forth, the answer, unfortunately, is no. And that does read a little inconsistent with the legislation, which we thought was January 1st. But as soon as that kicks in, again, it will be upside we have not planned for here. On the energy communities, I think the read

is stronger than that that would be January 1st, but the particulars of the exact geographic qualifications and how big is the--it'll be, how big is the map, which four quarters are picked up? Those sorts of things are more nuanced and require the guidance.

**Mary Powell**

Same thing with the domestic adder. Yeah.

**Danny Abajian**

Yeah. And from a funding perspective, certainly, our investors would be happy--the tax equity investors would be happy to realize that tax credit value, provided they have the appetite and pay for it in the advance. So I think just to clarify your question, right, the constraints, is it available by law? And if it's available by law, can we monetize it? What we're working on, is it available by law? We're pretty confident that we can monetize it. If it's available by law is a checkbox.

**Steve Fleishman**

Okay. And then my other question is just as you think about the adder's availability later in the year or next year, how much of that do you think you can retain - i.e., how much is it the risk of kind of being competed away to get customers? Or is it likely that you can retain a good amount of these?

**Mary Powell**

It's likely we can retain a good amount of it. Yeah. I mean, we're feeling like the size of the opportunity, we're feeling is one that we will absolutely be able to take advantage of. On the low and moderate income adder, it's more an issue of when it's going to kick in. And the other two are more in the final definition of the energy communities and what exactly applies to the domestic content adder. But as I said, in my remarks, we feel like we're really well positioned against what we think is a likely outcome on the domestic content adders.

We already are doing business in what we think are likely areas of energy communities. And again, the low and moderate income adders will kick in, we know for sure, by the end of '23 going into '24. And who knows, could end up being sooner, given the different dialogues going on about those adders and the timing.

**Operator**

Our next question comes from Christine Cho with Barclays. Please proceed with your question.

**Christine Cho**

Thank you for taking my question. I just wanted to start off, when we think about the cadence of the installations that will take place throughout the year in California, you mentioned that you expect that it'll take a couple of months, but I would assume if someone wants to be grandfathered under NEM 2.0, they aren't really looking for a battery. So should we think that those 2.0 applications will be prioritized over solar plus storage installations, especially if it takes 50% longer to do those? And so by that logic, should we think that the solar plus storage installations will be more backend loaded this year?

**Mary Powell**

I mean, definitely, to your point, we're seeing a lot--yeah, we're seeing a pull forward of demand. Yes, to your point, I think it's absolutely logical to believe that there will be a higher attach rate once we get past April 15th, for sure. In terms of how we manage our pipeline, though, and how we set customer expectations, we're being really clear with customers now that are trying to get in before the cutover of the time required to get them to installation as that pipeline builds.

So we're, of course, very, very focused on making sure it's an amazing customer experience for those customers in the pipeline, and that we're meeting all the requirements so that they technically can count for having made that cutoff date. So that's also a really important part of it. But in terms of prioritizing, we very much will be moving customers along in the order in which they came into our pipeline.

**Christine Cho**

Okay. And then I don't know how easy it is to answer this question, but is there anything you can provide around the difference in subscriber value for a solar customer versus solar plus storage customer in California? Just as we kind of think about customer installations might be down, but there is an offset because the subscriber value for a solar plus storage customer is higher.

**Mary Powell**

Yeah, 100%.

**Edward Fenster**

Yeah. With backup, it's in the low single digits, like thousands per customer would be the incremental margin for a customer getting the battery in a backup product. Of course, that will vary depending on the size of the home, the number of batteries they have, the number of loads they want to back up. So that's more of an average number, but probably with a big range.

**Operator**

Our next question comes from Corinne Blanchard with Deutsche Bank. Please proceed with your question.

**Corinne Blanchard**

Hey. Good afternoon. Thank you for taking my question. Just one follow up also on pricing. Do you still have any room for pricing power? I mean, like increasing pricing over the next couple of months?

**Danny Abajian**

Yeah. We continuously monitor the macro environment with respect to interest rates on the one hand, and utility rates on the other hand. So that's something we've continuously done. As we talked about last year, pricing was more of an event that we had to talk about last year as we were exiting a declining rate environment and transition--I think the whole industry transitioning into a rising rate environment, and how dynamic it gets as to pricing. And today, it is fully dynamic and we're constantly looking at those two factors, as well as our own volume, and optimizing on profit. So I would say there is opportunity, but we're kind of looking at all of those factors and being deliberate and more specific from a geographic perspective, as opposed to thinking about it kind of as a national thing.

**Corinne Blanchard**

Okay. Makes sense. And then the next question I had, and maybe I missed it earlier on the call, but can you provide more color if you expect further increase in expense? I know some of your peers commented heavily invest into super California growth. Is that as well what you intend to do over the next few weeks or few months?

**Danny Abajian**

I think the cost increases that you'll see will be related to, again, higher cost equipment, or higher ticket price equipment going into jobs, which is the battery. So you'll see a general creation cost increase against that. But if you look at last year, which is kind of in a more stable period on the attachment rate, you saw costs generally remained flat. But over that period of time, you also saw equipment prices going up, equipment prices going up but offsetting that from efficiency gains on the installation side. And we expect to continue to grind for that dynamic throughout this year and see the net subscriber value, the bottom line continue to increase.

**Operator**

Our next question comes from Abhi Sinha Northland Financial. Please proceed with your question.

**Abhi Sinha**

Yeah. Hi. Thanks for taking my question. So I just wanted to--if you could share something on Puerto Rico, your progress from Puerto Rico? I mean, whether it's in market share, what it is now. What are you expecting next three to five years? Your impact of (inaudible) span. Anything on those lines? And also, when I'm comparing our VPP, what you have in Puerto Rico versus what's the PG&E customers? I mean, I think Puerto Rico you said about \$2,000 per (inaudible) value and NPV. Is that something like that? What are you going to be? I'm just trying to understand, compare and contrast the two VPP plans, Puerto Rico versus PG&E here.

**Mary Powell**

Yeah. Thank you so much. I actually just spent some time in Puerto Rico with our partners down there and with all the folks that are so important from a virtual powerplant perspective. I mean, Puerto Rico, to your point, is an incredibly important market for us. It's one, as I like to say a lot to folks I speak to, it's like Puerto Rico is one of our postcards from the future, in the context of how they have a really incredible high storage attach rate. We've also been deploying the span panel in Puerto Rico. So we've really been utilizing Puerto Rico's forward leaning need and desire for clean energy technology transformation to really leverage the strength of Sunrun in the context of the innovation that we've been doing and bringing there.

So we are very, very bullish on the opportunity in Puerto Rico. We're very glad that we work with so many incredible channel partners in Puerto Rico, and that we're able to leverage what we bring from a perspective of storage capacity, span panel capacity, and to your point, really helping to leverage all of that from a grid perspective. And one of the meetings I was so excited to have when I was there, was with the governor and his team about how do we expand? So how do we take the work we've already done and really transform the system so that we can be leveraging more and more solar plus storage systems going online to help really rethink how the grid is managed in Puerto Rico? So yes, very important market for us.

**Abhi Sinha**

Sure. Any comment that you put in terms of market share you have now versus what you might expect in three to five years?

**Mary Powell**

I mean, we expect it to continue to go up, you know?

**Operator**

Our next question comes from Colin Rusch with Oppenheimer. Please proceed with your question.

**Colin Rusch**

Thanks so much. And Danny, this one's for you. Just around this last financing, can you talk a little bit about where you were able to push the cost of capital a little bit lower and how durable those advantages are? Is it around things like construction, underwriting assumptions, performance of the systems on the field? Just trying to get a better understanding of what's happening with the portfolio that's helping enable that cost of capital advantage.

**Danny Abajian**

Yeah. I think the last one was execution strategy. We had been signaling for a while that when markets move, especially in a rising credit spread environment, as markets move, the debt capital markets can be faster to move than the commercial bank markets, and that kind of goes in both directions. And the fact that we have very deep multiyear relationships that we've built and sustained for almost a decade, is really valuable to us in those periods of time and we obviously appreciate that relationship capital as well. So I would say that was kind of the key driver. And where today, spreads have quickly in the ABS market, moved to a similar spot to where we executed that bank transaction, just underscoring that markets can fluctuate more in ABS side. And on the bank side, where we have access to both at our scale allows us to be nimble and shift back and forth as we balance our deals throughout--our multiple deals throughout the period of a calendar year.

**Edward Fenster**

Yeah. I mean, just as Danny point out, understanding what's happening in all the markets and setting a strategy accordant with that, and then having strong relationships when the market is tightening, being a respected leader with a long term relationship pays probably more dividends, frankly, than in a fantastic market. And I think we've benefited a little bit from that as well.

**Colin Rusch**

Okay. That's super helpful. And then on the VPP technology side, obviously, there's multiple layers of control and software that you guys are working with, but I'm curious about any real meaningful innovation or hardware specifically that you guys are seeing as emerging as really meaningfully contributing to the



functionality and granular control that you need to really manage those assets, or if it's still really at the system level for you guys to really capture the value out of that system.

**Mary Powell**

Yeah. I mean, the VPP software that lunar has, as I hit, we find it very strong. I mean, make no mistake, we've been doing--Sunrun's been doing virtual power plant work for years. When I was the executive of a utility, we launched a virtual power plant like seven years ago. The technologies existed for a long time. It's more the culture of the utilities that's been the bigger challenge, to be quite honest with you. But yes, the technology is improving and advancing and I'm really bullish on what lunar can do in this space and in this context. So we're really excited about it because again, I see no direction but increased demand for these kinds of distributed assets to be used to help the grid of the future.

**Operator**

We have reached the end of our question and answer session. This concludes today's conference. Thank you for your participation. You may disconnect your lines at this time.

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*availability of solar panels, batteries, and other components and raw materials; the Company's business plan and the Company's ability to effectively manage the Company's growth and labor constraints; the Company's ability to meet the covenants in the Company's investment funds and debt facilities; factors impacting the home electrification and solar industry generally, and such other risks and uncertainties identified in the reports that we file with the U.S. Securities and Exchange Commission from time to time. All forward-looking statements used herein are based on information available to us as of the date hereof, and we assume no obligation to update publicly these forward-looking statements for any reason, except as required by law.*